

## WHAT IS CLAIMED IS:

1. A printing system including a plurality of data processing devices and a plurality of printing devices for executing a printing operation when received a printing job signal from any one of the plurality of data processing devices, respectively, comprising:

communication means for communicating data among the plurality of printing devices;

10 printing means provided in each of the plurality of printing devices for executing a print job based on the print job signal; and

a controller for executing the following processings;

grouping the plurality of printing devices based on processing languages employed in respective printing devices,

designating a managing printing device among the printing devices belonging to the same language group,

transmitting a status signal from each of the printing devices belonging to the same language group to the 20 designated managing printing device through the communication means; and

transferring a printing job signal received by a printing device being inoperative to execute a print job to another one of the printing devices of the same language 25 group to which the inoperative printing device belongs.

2. A printing system according to claim 1, wherein  
the managing printing device provides with a first storage  
means for storing data regarding other printing devices  
belonging to the same language group,  
each of the other printing devices provides with a  
second storage means for storing information regarding the  
managing printing device of the same language group, and  
said controller executes the following processings:  
10 transmitting the processing language and data  
processing capability of each of the plurality of printing  
devices to all other printing devices,  
grouping the plurality of printing devices based on  
processing languages employed in respective printing  
15 devices,  
designating a printing device having the highest data  
processing capability in the same language group as the  
managing printing device,  
making the designated managing printing device store  
20 information about all other printing devices belonging to  
the same language group into said first storage means, and  
making each of all printing devices other than the  
managing printing device belonging to the same language  
group store information about the managing printing device  
25 into each second storage means.

3. A printing system according to claim 2, wherein  
the controller selects a printing device to which the  
managing printing device has to distribute the printing job  
5 signal based on the data processing capability.

4. A printing system including a plurality of data  
processing devices and a plurality of printing devices for  
executing a printing operation when received a printing job  
10 signal from any one of the plurality of data processing  
devices, respectively, comprising:

communication means for communicating data among the  
plurality of printing devices;

15 printing means provided in each of the plurality of  
printing devices for executing a print job based on the  
print job signal; and

a controller for executing the following processings;  
grouping the plurality of printing devices based on  
processing languages employed in respective printing  
20 devices,

designating a printing device capable of processing  
different languages in the plural language groups,

transmitting a status signal from each of the printing  
devices belonging to the same language group to the  
25 managing printing device through the communication means;

and

transferring a printing job signal received by a printing device being inoperative to execute a print job to another one of the printing devices of the same language group to which the inoperative printing device belongs.

5

5. A printing system according to claim 4, wherein the managing printing device provides with a first storage means for storing information regarding other printing devices belonging to the same language group,

10

each of the other printing devices provides with a second storage means for storing data regarding the managing printing device of the same language group, and said controller executes the following processings:

15

transmitting the processing language and data processing capability of each of the plurality of printing devices to all other printing devices,

20

grouping the plurality of printing devices based on processing languages employed in respective printing devices,

designating a printing device having the highest data processing capability in the same language group as the managing printing device,

25

making the designated managing printing device store information about all other printing devices belonging to

DRAFTED IN JAPANESE

the same language group into said first storage means, and  
making each of all printing devices other than the  
managing printing device belonging to the same language  
group store information about the managing printing device  
5 into each second storage means.

6. A printing system according to claim 5, wherein  
the controller selects a printing device to which the  
managing printing device has to distribute the printing job  
10 signal based on the data processing capability.

7. A printing system including a plurality of data  
processing devices and a plurality of printing devices for  
executing a printing operation when received a printing job  
15 signal from any one of the plurality of data processing  
devices, respectively, comprising:

communication means for communicating data among the  
plurality of printing devices;  
printing means provided in each of the plurality of  
20 printing devices for executing a print job based on the  
print job signal; and

a controller for executing the following processings;  
grouping the plurality of printing devices based on  
processing languages employed in respective printing  
25 devices,

designating either one of the printing devices belonging to the same language group or one printing device belonging to plural language groups as a managing printing device;

5       transmitting individual status signals from all printing devices belonging to the same language group to the managing printing device through the communication means; and

10      transferring a printing job signal received by a printing device being inoperative to execute a print job to another one of the printing devices of the same language group to which the inoperative printing device belongs.

8.       A printing system according to claim 7, wherein  
15      the managing printing device provides with a first storage means for storing information regarding other printing devices belonging to the same language group,

each of the other printing devices provides with a second storage means for storing information regarding the  
20      managing printing device of the same language group, and  
          said controller executes the following processings:

transmitting the processing language and data processing capability of each of the plurality of printing devices to all other printing devices,

25      grouping the plurality of printing devices based on

REEDER'S INVENTION

processing languages employed in respective printing devices,

designating a printing device having the highest data processing capability in the same language group as the managing printing device,

5 making the designated managing printing device store information about all other printing devices belonging to the same language group into said first storage means, and  
making each of all printing devices other than the managing printing device belonging to the same language group store information about the managing printing device into each second storage means.

9. A printing device for executing a printing operation when received a printing job signal from any one of plural data processing devices comprising:

15 printing means for executing a print job based on the printing job signal;

20 communication means for communicating data between the printing device and other printing devices;

storage means for storing information about other printing devices having a processing language same as that of the printing device or a managing printing device managing the printing device; and

25 a controller for executing the following processings;

SEARCHED - INDEXED - SERIALIZED - FILED

APPLIED MATHEMATICS

grouping other printing devices having a processing language same as that of the printing device;

5       communicating data regarding the processing language and data processing capability between other printing devices belonging to the same language group while comparing the data processing capability of the printing device with those of other printing devices;

10      if the printing device has the highest data processing capability, designating itself as a managing printing device and storing information regarding other printing devices belonging to the same language group into the storage means, and, if not, storing a printing device having the highest data processing capability among other printing devices as a managing printing device into the storage means; and

15      if the printing device itself is the managing printing device, selecting one printing device to which the print job signal is to be delivered upon receiving a request for a print job from one of other printing devices to deliver the print job signal to the selected printing device; and

20      if the printing device itself is inoperable to execute a print job, sending the request for a print job and the print job signal to the managing printing device.

25      10.     A program product stored in a recording medium

executable by a computer for controlling a printing system including a plurality of data processing devices and a plurality of printing devices each of which executes a print job when received a print job signal, said program  
5 product including a program for

grouping the plurality of printing devices based on processing languages employed in respective printing devices;

10 designating one of the printing devices belonging to the same processing language group as a managing printing device;

transmitting individual status signals from all other printing devices belonging to the same processing language group to the designated managing printing device; and

15 delivering a print job signal received by one printing device being inoperable to execute a print job to one of other printing devices belonging to the same processing language group.

20 11. A program product according to claim 10 wherein a processing language and data processing capability of each printing device are transmitted to all other printing devices,

25 all printing devices are grouped into one or more groups based on individual processing languages,

a printing device having the highest data processing capability among the printing devices belonging to the same processing language is assigned as a managing printing device;

5           the managing printing device stores information about all other printing devices belonging to the same processing language group; and  
all other printing devices store information about the managing printing device, respectively.

10           12.       A program product according to claim 11, wherein the managing printing device selects a printing device to which a print job signal is to be delivered based on respective data processing capability.

15           13.       A program product stored in a recording medium executable by a computer for controlling a printing system including a plurality of data processing devices and a plurality of printing devices each of which executes a printing operation when received a print job signal, said program product including a program for  
20           assigning a printing device belonging to plural processing language groups as a managing printing device;  
transmitting respective status signals from all other  
25           printing devices belonging to each of the plural processing

language groups to the managing printing device; and  
delivering a print job signal received by a printing  
device which is inoperable to execute a print job to one of  
other printing devices belonging to the same processing  
language group.

14. A program product according to claim 13 wherein  
each printing device transmits its processing language and  
data processing capability to all other printing devices;  
all printing devices are grouped into one or more  
groups based on individual processing languages,  
a printing device having the highest data processing  
capability among the printing devices belonging to the same  
processing language is assigned as a managing printing  
device;

the managing printing device stores information about  
all other printing devices belonging to the same processing  
language group; and

all other printing devices store information about the  
managing printing device, respectively.

15. A program product according to claim 14, wherein  
the managing printing device selects a printing device to  
which a job signal is to be delivered based on respective  
data processing capability.

16. A program product stored in a recording medium executable by a computer for controlling a printing system including a plurality of data processing devices and a plurality of printing devices each of which executes a print job when received a print job signal, said program product including a program for grouping the plurality of printing devices based on processing languages employed in respective printing devices,  
10 designating either one of the printing devices belonging to the same language group or one printing device belonging to plural language groups as a managing printing device;  
15 transmitting individual status signals from all printing devices belonging to the same language group to the managing printing device; and  
transferring a printing job signal received by a printing device being inoperative to execute a print job to another one of the printing devices of the same language group to which the inoperative printing device belongs.  
20  
25

17. A program product according to claim 16, wherein the managing printing device provides with a first storage means for storing information regarding other printing

devices belonging to the same language group,  
each of the other printing devices provides with a  
second storage means for storing information regarding the  
managing printing device of the same language group, and

5 said controller executes the following processings:

transmitting the processing language and data  
processing capability of each of the plurality of printing  
devices to all other printing devices,

10 grouping the plurality of printing devices based on  
processing languages employed in respective printing  
devices,

designating a printing device having the highest data  
processing capability in the same language group as the  
managing printing device,

15 making the designated managing printing device store  
information about all other printing devices belonging to  
the same language group into said first storage means, and  
making each of all printing devices other than the  
managing printing device belonging to the same language  
group store information about the managing printing device  
20 into each second storage means.

18. A method for controlling a printing system  
including a plurality of data processing devices and a  
plurality of printing devices for executing a print job  
25

SEARCHED - INDEXED - SERIALIZED - FILED

when received a print job signal from any one of the plurality of printing devices, respectively comprising the steps of:

grouping the plurality of printing devices based on  
5 processing languages employed in respective printing devices;

designating a managing printing device among the printing devices belonging to the same language group;

transmitting a status signal from each of all printing  
10 devices belonging to the same language group to the managing printing device; and

transferring a print job signal received by a printing device being inoperative to execute a print job to another one of the printing devices of the same language group to  
15 which the inoperative printing device belongs.

19. A method for controlling a printing system including a plurality of data processing devices and a plurality of printing devices for executing a print job when received a print job signal from any one of the plurality of printing devices, respectively comprising the steps of:

grouping the plurality of printing devices based on processing languages employed in respective printing  
25 devices;

designating a printing device capable of processing different languages in the plural language groups among the printing devices as a managing printing device;

transmitting a status signal from each of all printing  
5 devices belonging to the same language group to the managing printing device; and

transferring a print job signal received by a printing device being inoperative to execute a print job to another one of the printing devices of the same language group to  
10 which the inoperative printing device belongs.

20. A method for controlling a printing system including a plurality of data processing devices and a plurality of printing devices for executing a print job when received a print job signal from any one of the plurality of printing devices, respectively comprising the steps of:

grouping the plurality of printing devices based on processing languages employed in respective printing  
20 devices;

selectively designating either one of the printing devices belonging to the same language group or one printing device belonging to plural language groups as a managing printing device;

25 transmitting a status signal from each of all printing

devices belonging to the same language group to the managing printing device; and

transferring a print job signal received by a printing device being inoperative to execute a print job to another 5 one of the printing devices of the same language group to which the inoperative printing device belongs.

21. A printing system including a plurality of data processing devices and a plurality of printing devices for executing a printing operation when received a printing job signal from any one of the plurality of data processing 10 devices, respectively, comprising:

communication means for communicating data among the plurality of printing devices;

printing means provided in each of the plurality of 15 printing devices for executing a print job based on the print job signal;

storage means for storing device information of other printing devices; and

a controller for executing the following processings; 20 grouping the plurality of printing devices based on processing languages employed in respective printing devices into plural language groups;

designating a printing device having the highest data 25 processing capability among printing devices capable of

processing at least two different languages;  
storing device information about all printing devices  
belonging to each of the language groups processable by the  
designated managing printing device; and  
transferring a printing job data being transferred  
from any printing device to another printing device  
belonging to the same language group.

5  
22. A printing system according to claim 21 wherein  
10 the controller selects the managing printing device based  
on the device information about the plurality of printing  
devices, groups the plurality of printing devices based on  
respective processing languages processable by the managing  
printing device,

15 transmits device information about printing devices  
belonging to respective processing languages processable by  
the managing printing device and notifies information about  
the managing printing device to all other printing devices  
belonging to the respective language groups.

20  
23. A printing system according to claim 22 further  
comprising a manual selection means for selecting the  
managing printing device manually and arbitrarily based on  
the device information of the plurality of printing devices.

24. A printing system according to claim 21, wherein  
the controller transfers a print job data, when transferred  
from any printing device to the managing printing device,  
to a printing device having the lowest data processing  
5 capability among the printing devices belonging to the same  
language group.

25. A printing device for executing a print job when  
received a printing job signal from any one of plural data  
10 processing devices comprising:  
printing means for executing a print job based on the  
printing job signal;  
communication means for communication data between the  
printing device and other printing devices;  
15 storage means for storing information about other  
printing devices having a processing language same as that  
of the printing device or a managing printing device  
managing the printing device; and  
a controller for executing the following processings;  
20 if the printing device itself has been selected as the  
managing printing device, storing device information  
regarding other printing devices belonging to the same  
language group into the storage means, and, if not, storing  
the managing printing device of the printing device,  
25 storing device information regarding the managing printing

device;

if the printing device itself is not the managing printing device and is inoperative to execute a print job, transferring print job data to the managing printing device through the communication means; and

5 if the printing device itself is the managing printing device, transferring print job data to a printing device of the same language group which is operative to execute a print job.

10 26. A program product stored in a recording medium executable by a computer for controlling a printing system including a plurality of data processing devices and a plurality of printing devices each of which executes a print job when received a print job signal, said program product including a program for

15 grouping the plurality of printing devices based on processing languages employed in respective printing devices;

20 designating a printing device belonging to at least two language groups and having the highest data processing capability as a managing printing device;

storing device information regarding all printing devices belonging to individual language groups processable by the managing printing device; and

25

when print job data is transferred from any one of the printing devices, transferring the print job data to a printing device belonging to the same language group.

5       27.       A program product according to claim 26 wherein further executes the following processings:

          selecting a printing device belonging to at least two language groups and having the highest data processing capability among the printing devices belonging to at least  
10      two language groups as a managing printing device;

          grouping the plurality of printing devices based on processing languages processable by respective printing devices, and

15      transmitting device information regarding all printing devices belonging to the language groups processable by the managing printing device and notifying the managing printing device to printing devices belonging to each language group.

20      28.       A program product according to claim 27 in which the managing printing device is manually and arbitrarily selectable among the plurality of printing devices.

25      29.       A program product according to claim 26 in which the print job data, when transferred from any printing

device to the managing printing device, is transferred to a printing device having the lowest data processing capability among the printing devices belonging to the same language group.

5                 30. A method for controlling a printing system including a plurality of data processing devices and a plurality of printing devices each executing a print job when received a print job signal, comprising steps of:

10                 (a) grouping the plurality of printing devices based on processing languages employed in respective printing devices;

15                 (b) designating a printing device belonging to at least two language groups and having the highest data processing capability among printing devices belonging to at least two language groups;

20                 (c) storing device information regarding all printing devices belonging to respective language groups processable by the managing printing device; and

                   (d) transferring print job data, when transferred from any printing device, to another printing device belonging to the same language group.

00000000000000000000000000000000